

STIC Search Report Biotech-Chem Library

STIC Database Tracking Number: 204757

TO: Satya Gudibande

Location: Remsen 3a20 / 3c18

Thursday, October 19, 2006

Art Unit: 1654

Phone: 571-272-8146

Serial Number: 09 / 971929

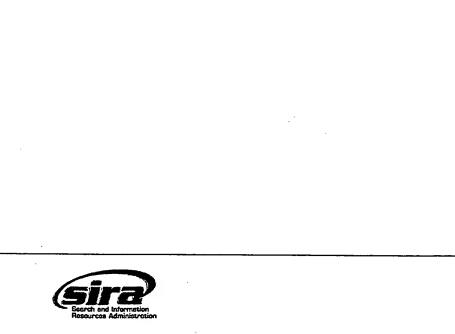
From: Jan Delaval Location: EIC 1700

Remsen 4a30

Phone: 571-272-2504

jan.delaval@uspto.gov

Search Notes



Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: SATYA GUDIBANDE Examiner #: 81066 Date: 10/17/ Art Unit: 1654 Phone Number: 2-8146 Serial Number: 09/171, 929	
Location (Bldg/Room#): 3A 20 (Mailbox #): 3C 18 Results Format Preferred (circle): (PAPER) ***********************************	DISK ****
To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:	
Title of Invention: Process to fooduring An Armide Lampond	
Inventors (please provide full names): Takana Wat y whi and	
Earliest Priority Date: 10/1/2006	
Search Topic: Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. In elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the in Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known	clude the
For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along appropriate serial number.	with the
Please Seanh Claim 1	
and the Electro Species With reference	Ь
Claim I.	
Mean call me if you have my questions	
2 Lands.	
Jalyer	
Mease forward his request	. K
Jan Delaval	
**************************************	**
TAFF USE ONLY Type of Search Vendors and cost where applicable NA Sequence (#) STN Dialog	
archer Phone #: NA Sequence (#) STN Dialog AA Sequence (#) Questel/Orbit Lexis/Nexis	,
archer Location:	
te Searcher Picked Up: 10 19 06 Bibliographic In-house sequence systems	
	Length e/Transl
archer Prep & Review Time:Other (specify)	

=> fil reg FILE 'REGISTRY' ENTERED AT 07:19:08 ON 19 OCT 2006 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9 DICTIONARY FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

VAR G1=46/6 NODE ATTRIBUTES: DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

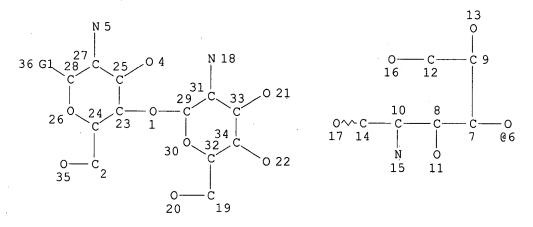
NUMBER OF NODES IS 47

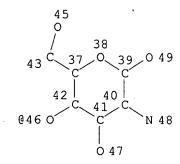
STEREO ATTRIBUTES: NONE

L29 1204 SEA FILE=REGISTRY SSS FUL L27

L30 2 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND NC2NC2NC2/ES

=> d sta que 138 L27 STR





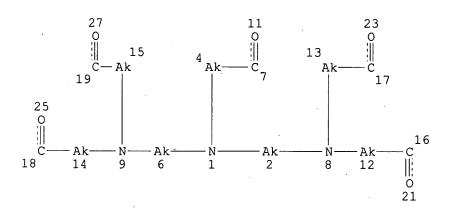
VAR G1=46/6 NODE ATTRIBUTES: DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES: RING(S) ARE ISOLATED OR EMBEDDED NUMBER OF NODES IS 47

STEREO ATTRIBUTES: NONE

L29 1204 SEA FILE=REGISTRY SSS FUL L27

L36 STR



NODE ATTRIBUTES: DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L38 20 SEA FILE=REGISTRY SUB=L29 SSS FUL L36

100.0% PROCESSED 1204 ITERATIONS

20 ANSWERS

SEARCH TIME: 00.00.01

=> d his

L8

(FILE 'HOME' ENTERED AT 06:18:59 ON 19 OCT 2006) SET COST OFF

FILE 'HCA' ENTERED AT 06:21:20 ON 19 OCT 2006 L1 1 S US20020077456/PN OR (US2001-971929# OR JP2000-310626)/AP,PRN E TAKANO/AU E TAKANO N/AU L2 91 S E3, E18 E NAOYUKI/AU E NAO YUKI/AU E NAKAMURA/AU L3 4 S E3 E NAKAMURA D/AU L448 S E3, E7, E8 E NAKAMURA NAME/AU E DAISAKU/AU E NIHON/PA,CS E NIHON MED/PA,CS L5 108 S E14-E26 E SUMITO/PA, CS L6 93032 S E55, E56 OR SUMITOMO?/PA, CS SEL RN L1 FILE 'REGISTRY' ENTERED AT 06:27:55 ON 19 OCT 2006 L7 22 S E1-E22

jan delaval - 19 october 2006

6 S L7 AND (C60H100N12O40 OR C48H79N9O34 OR C66H115N15O34)

```
7 S (C60H100N12O40 OR C48H79N9O34 OR C66H115N15O34) NOT L8
L9
L10
             13 S L8, L9
L11
             1 S 67-43-6
L12
             1 S 60-00-4
             1 S 60239-18-1
L13
              1 S 23911-25-3
L14
L15
              1 S 23911-26-4
L16
              2 S L7 AND NC2OC2/ES NOT L14,L15
L17
              2 S 148690-82-8 OR 411229-70-4
L18
             5 S 115724-92-0 OR 411229-75-9 OR 151677-09-7 OR 138885-99-1 OR 1
L19
              3 S L7 NOT L8-L18
L20
             1 S 84354-98-3
L21
             1 S 84354-98-3/CRN
L22
             2 S L20, L21
L23
             2 S C18H37N3O13/MF
L24
             1 S L23 NOT L22
L25
             0 S 835626-40-9/CRN
L26
             3 S L22, L23, L24
L27
               STR
L28
             50 S L27
L29
           1204 S L27 FUL
                SAV L29 SATYA971/A
L30
              2 S L29 AND NC2NC2NC2/ES
L31
             1 S L29 AND NC2OC2/ES
L32
               STR
L33
              0 S L32 SAM SUB=L29
L34
              STR L32
L35
             1 S L34 SAM SUB=L29
L36
              STR L34
L37
             1 S L36 SAM SUB=L29
L38
             20 S L36 FUL SUB=L29
                SAV L38 SATYA971A/A
L39
             11 S L38 NOT L10
L40
            0 S L39 NOT (C6/ES OR P/ELS)
L41
             2 S L10 NOT L30, L38
L42
             9 S L10 AND L38
L43
             0 S L29 AND (63215 OR 55514)/RID
L44
             2 S L27 CSS SAM SUB=L29
L45
             27 S L27 CSS FUL SUB=L29
                SAV L45 SATYA971B/A
             9 S L45 AND 1/NC
L46
L47
           17 S L45 NOT L26, L46
               SEL RN 7 16 17
L48
              3 S E23-E25
L49
            13 S L26, L46, L48
     FILE 'HCAPLUS' ENTERED AT 07:17:06 ON 19 OCT 2006
L50
              2 S L30 OR L42
L51
              3 S L49 AND L11-L13
L52
              1 S L49 AND L14-L17
L53
              4 S L50, L51, L52
              3 S L53 AND L1-L6
L54
L55
              4 S L53, L54
     FILE 'USPATFULL' ENTERED AT 07:18:27 ON 19 OCT 2006
L56
          1 S L30 OR L42
L57
              4 S L49 AND L11-L13
L58
             1 S L49 AND L14-L17
L59
             4 S L56-L58
```

FILE 'REGISTRY' ENTERED AT 07:19:08 ON 19 OCT 2006

=> s 130 or 142 L60 11 L30 OR L42

=> d ide can tot

L60 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-15-6 REGISTRY

ED Entered STN: 15 Nov 2005

D-Mannitol, O-2-[[[[2-[[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-α-D-glucopyranosyl-(1-4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-α-D-glucopyranosyl-(1-4)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-(9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-14-5 REGISTRY

ED Entered STN: 15 Nov 2005

CN D-Mannitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy- α -D-glucopyranosyl-(1-4)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

PAGE 1-A

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-13-4 REGISTRY

ED Entered STN: 15 Nov 2005

CN D-Mannitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-glucopyranosyl-(1-4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-

 β -D-glucopyranosyl-(1 \rightarrow 4)-2-[[[[2-[[2-

[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 1 REFERENCES IN FILE CA (1907 TO DATE)
- 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

jan delaval - 19 october 2006

REFERENCE 1: 143:422550

L60 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-12-3 REGISTRY

ED Entered STN: 15 Nov 2005

 β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-[[[[2-[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)a

mino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (-).

$$HO_2C$$
 HO_2C
 HO_2C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-11-2 REGISTRY

ΕD Entered STN: 15 Nov 2005

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)am ino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -Dglucopyranosyl- $(1\rightarrow 4)$ -O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-glucopyranosyl- $(1\rightarrow 4)$ -2-[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)a mino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-10-1 REGISTRY

ED Entered STN: 15 Nov 2005

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- β -D-glucopyranosyl-(1-)40-0-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-

 α -D-glucopyranosyl-(1 \rightarrow 4)-2-[[[[2-[[2-

[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 1 REFERENCES IN FILE CA (1907 TO DATE)
- 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 868055-09-8 REGISTRY

ED Entered STN: 15 Nov 2005

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-

glucopyranosyl- $(1\rightarrow 4)$ -O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-

 β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-[[[[2-[[2-

[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)a

mino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry. Rotation (+).

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

L60 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RŅ 411229-74-8 REGISTRY

ED Entered STN: 06 May 2002

CN D-Galactitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl-(1-4)-O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl-(1-3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C66 H115 N15 O34

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PAGE 2-A

PAGE 2-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:325778

L60 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN 411229-73-7 REGISTRY

ED Entered STN: 06 May 2002

CN D-Glucitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1-4)-O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1-3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C66 H115 N15 O34

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

$$OO_2$$
H

 OO_2 H

 OO_3 H

 OO_4 H

 O

PAGE 2-A

PAGE 2-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:325778

L60 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN **411229-71-5** REGISTRY

ED Entered STN: 06 May 2002

CN D-Galactitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl) amino]ethyl](carboxymethyl) amino]ethyl] (carboxymethyl) amino]-2-deoxy- α -D-galactopyranosyl-(1+4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl] (carboxymethyl) amino]-2-deoxy- α -D-galactopyranosyl-(1+3)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl] (carboxymethyl) amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:325778

L60 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2006 ACS on STN

RN **411229-68-0** REGISTRY

ED Entered STN: 06 May 2002

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- β -D-glucopyranosyl-(1-4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-

β-D-glucopyranosyl-(1→3)-2-[[[[2-[[2-

[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C60 H100 N12 O40

SR CA

LC STN Files: CA, CAPLUS, CASREACT, PROUSDDR, SYNTHLINE, USPATFULL

Absolute stereochemistry. Rotation (-).

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 2 REFERENCES IN FILE CA (1907 TO DATE)
- 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:422550

REFERENCE 2: 136:325778

=> fil hcaplus FILE 'HCAPLUS' ENTERED AT 07:20:10 ON 19 OCT 2006 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 19 Oct 2006 VOL 145 ISS 17 FILE LAST UPDATED: 17 Oct 2006 (20061017/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d bib abs hitstr retable tot 155

- L55 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
- · AN 2005:951424 HCAPLUS
 - DN 143:422550
 - TI Synthesis of DTPA-conjugated (1,4)-linked 2-amino-glycosides varying in the anomeric configuration and their MRI contrast effect
 - AU Tanaka, Hiroshi; Ando, Yoshio; Wada, Masatoshi; Takahashi, Takashi
- CS Department of Applied Chemistry, Graduate School of Science and Engineering, Tokyo Institute of Technology, Tokyo, Meguro, 152-8552, Japan
- SO Organic & Biomolecular Chemistry (2005), 3(18), 3311-3328 CODEN: OBCRAK; ISSN: 1477-0520
- PB Royal Society of Chemistry
- DT Journal
- LA English
- AB The efficient synthesis of diethylenetriamine-N, N, N', N'', N''-penta-acetic acid (DTPA)-conjugated oligosaccharides composed of α - and/or β -linked tri to mono-glucosamines is described. Gd(III) complex with DTPA-conjugated chitotriitol has been reported to be an effective MRI contrast agent. In order to elucidate the structure-property relationships, we planned to synthesize the DTPA-conjugated 2-amino-tri-, di-, and monosaccharides varying in configuration at the anomeric positions and the C2 position on the reducing end. Our strategy for the synthesis of the DTPA-conjugated oligosaccharides involves O-per-benzyl protected 2-amino-tri-, di-, and monosaccharides as key intermediates. The 2-amino-glycosides were prepared by non-selective glycosidation of 2-azido-2-deoxy-glycosyl donors, followed by separation of two anomeric isomers. Although the synthesis involves separation of the stereoisomers, it circumvents not only the careful tuning of reaction conditions, but also the time-consuming preparation of glycosyl donors attached to different

protecting groups. The protected 2-amino-glycosides were converted to the fully deprotected DTPA-conjugated tri- to monosaccharides by the same operation. MRI phantom study using the Gd(III) complexes of DTPA-conjugated oligosaccharides indicates that the number of the monosaccharide units was critical for enhancing the relative signal intensity of water protons per Gd, and various stereoisomers would be candidate scaffolds for MRI contrast agents.

IT 411229-68-0P 868055-09-8P 868055-10-1P 868055-11-2P 868055-12-3P 868055-13-4P 868055-14-5P 868055-15-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis of DTPA-conjugated (1,4)-linked 2-amino-glycosides varying in the anomeric configuration and their MRI contrast effect)

RN 411229-68-0 HCAPLUS

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-β-Dglucopyranosyl-(1→4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxyβ-D-glucopyranosyl-(1→3)-2-[[[[2-[[2[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-09-8 HCAPLUS

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy- β -D-glucopyranosyl-(1-4)-2-[[[[2-[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-10-1 HCAPLUS

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- β -D-glucopyranosyl-(1-4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy- α -D-glucopyranosyl-(1-4)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-11-2 HCAPLUS

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl]amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-12-3 HCAPLUS

CN D-Mannitol, $O-2-[[[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl]amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy-$\beta-D-glucopyranosyl-(1\rightarrow4)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl]amino]-2-deoxy-(9CI) (CA INDEX NAME)$

Absolute stereochemistry. Rotation (-).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-13-4 HCAPLUS

CN D-Mannitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-glucopyranosyl-(1 \rightarrow 4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy- β -D-glucopyranosyl-(1 \rightarrow 4)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-14-5 HCAPLUS

CN D-Mannitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- β -D-glucopyranosyl-(1-)40-0-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-glucopyranosyl-(1-)40-2-[[[[2-[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

$$HO_2C$$
 HO_2C
 HO_2C

RN 868055-15-6 HCAPLUS

CN D-Mannitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-α-Dglucopyranosyl-(1→4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-α-D-glucopyranosyl-(1→4)-2-[[[[2-[[2[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

PAGE 1-B

n	E.	n n	\mathbf{r}	+	\Box
R	н. Т	ľΑ	н	. П	١.

Referenced Author (RAU)	Year (RPY)	(RVL)	(RPG)	(RWK)	Referenced
Alper, P	11996				HCAPLUS
Andre, J	12004	110	15804	Chem Eur J	HCAPLUS
Arano, Y	1996	139	3451	J Med Chem	HCAPLUS
Bammer, R	12004	122	619	Magn Reson Imaging	HCAPLUS
Caravan, P	11999	199	2293	Chem Rev	HCAPLUS
Chang, C	12002		4603	Org Lett	HCAPLUS
de Crespigny, A	11999	17	1297	Magn Reson Imaging	MEDLINE
Ding, Y	11996	4	683	Bioorg Med Chem	HCAPLUS
Fu, Y	12002		3966	Eur J Org Chem	HCAPLUS
Gololobov, Y	1981	37	437	Tetrahedron	HCAPLUS
Gololobov, Y	1992	33	1353	Tetrahedron	
Illum, L	1994	1	1186	Pharm Res	HCAPLUS
Ishihara, M	12002		331	Trends Glycosci Glyc	HCAPLUS
Kanemitu, T	12002		339	Comb Chem High Throu	
Kanie, O	1995		12720	Angew Chem, Int Ed	HCAPLUS
Kinay, W	11985	•	1537	Liebigs Ann Chem	
Kumar, M	12004	104	6017	Chem Rev	
Lauffer, R	1987	•		Chem Rev	HCAPLUS
Litjens, R	2001	42	8693	Tetrahedron Lett	HCAPLUS
Maclaughlin, F	1998		259	J Controlled Release	HCAPLUS
Mansouri, S			1	Eur J Pharm Biopharm	HCAPLUS
Mehta, A	1992		5441	Tetrahedron Lett	HCAPLUS
Morimoto, M	12002		205	Trends Glycosci Glyc	HCAPLUS
Orgueira, H	2003			Chem Eur J	HCAPLUS
Peniche, C	12003			Macromol Biosci	HCAPLUS
Richardson, S	1999			Int J Pharm	HCAPLUS
Roy, K	1999		•	Nat Med	HCAPLUS
Ruff, J	1965				HCAPLUS
Sato, T	2001			·	HCAPLUS
Schmidt, R			21	Adv Carbohydr Chem B	HCAPLUS
Schmidt, R	•		731	Angew Chem, Int Ed	
Schmidt, R			212	Angew Chem, Int Ed	
Scriven, E	1988	88	351	Chem Rev	

```
Shim, J
                       |2003 |90
                                   |3270
                                         | J Appl Polym Sci
                                                              | HCAPLUS
Takahashi, M
                      |2000 |41
                                  |8485
                                         |Tetrahedron Lett
                                                              IHCAPLUS
Thanou, M
                      |2001 |50
                                  |S91
                                         |Adv Drug Delivery Re|HCAPLUS
                      |1991 |74
Vasella, A
                                   12073
                                         |Helv Chim Acta
                                                              | HCAPLUS
Wang, Y
                       |2003 |24
                                   11047
                                         |Biomaterials
                                                              | HCAPLUS
L55 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
     2002:504798 HCAPLUS
DN
     137:87494
ΤI
     Process for producing and purifying metal complex of aminooligosaccharide
     derivative
IN
     Hashiguchi, Yuji; Suzuki, Keisuke; Wada, Masatoshi
PA
    Nihon Medi-Physics Co., Ltd., Japan
SO
     PCT Int. Appl., 19 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     Japanese
FAN.CNT 1
     PATENT NO.
                        KIND
                               DATE
                                           APPLICATION NO.
                                                                  DATE
     -----
                                           -----
                        ----
                                                                  _____
PΙ
     WO 2002051854
                        A1
                               20020704
                                        WO 2001-JP10983
                                                                  20011214
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,
            PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
            US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
            CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     CA 2400327
                               20020704
                                         CA 2001-2400327
                         AΑ
                                                                 20011214
     EP 1258488
                                           EP 2001-272252
                         Α1
                               20021120
                                                                  20011214
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     NO 2002003975
                                           NO 2002-3975
                               20021022
                         Α
                                                                  20020821
     US 2003050452
                         Α1
                                           US 2002-204557
                               20030313
                                                                  20020822
                         Α
PRAI JP 2000-394258
                               20001226-
     WO 2001-JP10983
                         W
                               20011214
OS
     MARPAT 137:87494
GΙ
```

AB Disclosed is a process for producing a highly purified metal complex of an aminooligosaccharide derivative (I, II; m, n = 1-8; X = a bifunctional ligand) by effectively removing impurities, byproducts, excess eluates, etc. generated in the step of synthesizing the amino oligosaccharide derivative and the step of forming the metal complex thereof. The process comprises subjecting a crude liquid reaction mixture containing an aminooligosaccharide derivative to the step of complexing with metal ions and to a purification step, wherein the purification step comprises at least one stage by the solvent extraction

method, anion-exchange method, filter membrane separation method, electrodialysis, or adsorption method. Thus, a crude amidation product (CH3-DTPA) of reduced chitotrisaccharide and diethylenetriaminepentaacetic acid (DTPA) (.apprx.60 g) (50 mL) was adjusted pH 4 by 12 N HCl, slowly treated dropwise with 100 MeOH over .apprx.15 min with stirring, stirred at 30-35° for 15 min, and left to stand for 30 min for the phase separation The unreacted DTPA mainly migrated to the upper clear layer and to the bottom oil layer migrated mostly reduced chitotrisaccharide and low mol. and polymeric byproducts to recover 93.8% CH3-DTPA and remove 46.8% The oil layer was purified by HPLC on a column of Poros 50 HQ (Applied Systems Inc., 30 mm diameter + 250 mm length) using a Shimazu LC-8A apparatus and eluting out low mol. compds. CH3-DTPA, and polymers with aqueous NaCl at 100, 250, and 500 mmol/L, resp., to give an aqueous solution of CH3-DTPA (0.06%, 96.0% purity) which was desalted by a reverse osmosis module (diameter 4 in.) using a polyamide membrane to recover 98% CH3-DTPA with 99% desalting ratio. To the desalted solution was added dropwsie an aqueous solution of GdCl3, stirred at pH 5-7 to give an aqueous solution of CH3-DTPA-Gd complex which (640 mL, 3.2 g, 0.16 g/resin) was passed through a column of IRA67 (Cl form). The column was washed with deionized water 1,000 mL and sequentially eluted with aqueous NaCl at 10, 30, and 50 mmol/L to give CH3-DTPA-Gd complex (≥97% purity and .apprx.85% recovery).

IT 67-43-6DP, Diethylenetriaminepentaacetic acid, reaction product
with chitotrisaccharide 84354-98-3DP, reaction product with
diethylenetriaminepentaacetic acid
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic
preparation); PREP (Preparation); RACT (Reactant or reagent)

(process for producing metal complex of aminooligosaccharide derivative and purification by solvent extraction, ion-exchange chromatog., reverse osmosis, electrodialysis, or adsorption method.)

RN 67-43-6 HCAPLUS

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 84354-98-3 HCAPLUS

CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RETABLE

Referenced Autho	(RPY)	VOL PG	Referenced Work	Referenced
(RAU)		(RVL) (RPG)		File
Nihon Medi-Physics Nihon Medi-Physics Nihon Medi-Physics	Co L 1996 Co L 1996		JP 08208572 A US 5863518 A EP 707857 A1	HCAPLUS HCAPLUS HCAPLUS

L55 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:314437 HCAPLUS

DN 136:325778

TI Process for producing an amide oligosaccharides which can be used as a diagnostic imaging agents

IN Takano, Naoyuki; Nakamura, Daisaku

PA Sumitomo Chemical Company, Limited, Japan; Nihon Medi-Physics Co., Ltd.

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW.

DT Patent

LA English

FAN. CNT 1

T 2714 . (OTA T	_																			
PATENT NO.						KIN)	DATE			APPLICATION NO.						DATE				
							-														
ΡI	EΡ	1199	312			A2		2002	0424		EP 2	001-	3086	28		2	0011	009	<		
	ΕP	1199	312			A3		2002	0612												
	EΡ	1199	312			В1		2004	0721												
		R:	ΑT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	IT,	LI,	LU,	NL,	SE,	MC,	PT,			

		IE, SI,	LT,	LV,	FI, RO, MK,	CY, A	L, TR		
	TW	242562		В1	20051101	WT	2001-90124421	20011003	<
	ΑŲ	2001078226		Α5	20020801	AU	2001-78226	20011004	<
	ΑU	780604		B2	20050407				
	CA	2358227		AA	20020411	CA	2001-2358227	20011005	<
	ΝZ	514653		Α	20020927	NZ	2001-514653	20011005	<
	NO	2001004885		Α	20020412	NO	2001-4885	20011008	<
	US	2002077456		A1	20020620	US	2001-971929	20011009	<
	AT	271561		Ε	20040815	AT	2001-308628	20011009	<
	ES	2225429		Т3	20050316	ES	2001-1308628	20011009	<
	JΡ	2002187948		A2	20020705	JP	2001-313672	20011011	<
PRAI	JΡ	2000-310626		Α	20001011	<			
os	CAS	SREACT 136:325	778						
CT									

There is disclosed a process for producing an amide compound, which process is characterized in that a compound having an amino group is reacted with a polyaminopolycarboxylic acid anhydride in the presence of the polyaminopolycarboxylic acid. The present invention relates to a process for producing an amide compound having a polyaminopolycarboxylic acid group, which amide compound is a useful intermediate for pharmaceuticals, agricultural chems., and the like. For example, amide oligosaccharide I was prepared and can be used as a diagnostic imaging agent by allowing the polyaminopolycarboxylic acid group to make a complex with a radioactive or paramagnetic metallic element.

Ι

IT 67-43-6DP, Diethylenetriaminepentaacetic acid, human serum albumin conjugate 411229-68-0P 411229-71-5P 411229-73-7P 411229-74-8P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(process for producing an amide oligosaccharides which can be used as a diagnostic imaging agents)

RN 67-43-6 HCAPLUS

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 411229-68-0 HCAPLUS

CN D-Glucitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- β -D-glucopyranosyl-(1>4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]-2-deoxy- β -D-glucopyranosyl-(1>3)-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

PAGE 1-A

ОН

RN 411229-71-5 HCAPLUS

CN D-Galactitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl) amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-galactopyranosyl-(1-4)-O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-galactopyranosyl-(1-3)-2-[[[[2-[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

HO₂C

HO₂C

RN 411229-73-7 HCAPLUS

CN D-Glucitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1-4)-O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1-3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 2-A

PAGE 2-B

CO₂H HO₂C

411229-74-8 HCAPLUS

RNCN D-Galactitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl- $(1\rightarrow 4)-0-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tris(carboxyme$ tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl-(1-3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10tetraazacyclododec-1-yl]acétyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-B

PAGE 2-A

PAGE 2-B

IT 60-00-4, Ethylenediaminetetraacetic acid, reactions 67-43-6, Diethylenetriaminepentaacetic acid 23911-25-3, Ethylenediaminetetraacetic dianhydride 23911-26-4, Diethylenetriaminepentaacetic acid dianhydride 81329-81-9 106145-40-8 132438-15-4 148690-82-8 411229-70-4

RL: RCT (Reactant); RACT (Reactant or reagent)
 (process for producing an amide oligosaccharides which can be used as a
 diagnostic imaging agents)

RN 60-00-4 HCAPLUS

CN Glycine, N, N'-1, 2-ethanediylbis[N-(carboxymethyl)- (9CI) (CA INDEX NAME)

RN 67-43-6 HCAPLUS

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 23911-25-3 HCAPLUS

CN 2,6-Morpholinedione, 4,4'-(1,2-ethanediyl)bis- (9CI) (CA INDEX NAME)

RN 23911-26-4 HCAPLUS

CN Glycine, N, N-bis[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 81329-81-9 HCAPLUS

CN Glycine, N-(carboxymethyl)-N-[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 106145-40-8 HCAPLUS

CN Glycine, N-[2-[bis(carboxymethyl)amino]ethyl]-N-[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 132438-15-4 HCAPLUS

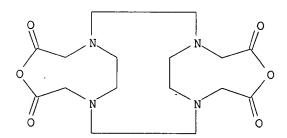
CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-, trihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

●3 HC1

RN 148690-82-8 HCAPLUS

CN 7,16-Dioxa-1,4,10,13-tetraazatricyclo[11.5.2.24,10]docosane-6,8,15,17-tetrone (9CI) (CA INDEX NAME)



RN 411229-70-4 HCAPLUS

CN 13-0xa-1,4,7,10-tetraazabicyclo[8.5.2]heptadecane-4,7-diacetic acid, 12,14-dioxo- (9CI) (CA INDEX NAME)

L55 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1993:517749 HCAPLUS

DN 119:117749

TI Preparation of bifunctional ligands for metals as imaging agent for

diagnosis

IN Hashifuchi, Yuji; Iwai, Kumiko; Seri, Shigemi; Kondo, Susumu; Azuma, Makoto

PA Nihon Medi-Physics Co., Ltd., Japan

SO Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DT Patent

LA English

r AN.	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 535668 EP 535668	A1	19930407 19960807	EP 1992-116804	19921001
	R: AT, BE, CH,	B1 DE, DK		, IT, LI, LU, NL, SE	
	JP 05097712	A2	19930420	JP 1991-258017	19911004
	JP 2894879	B2	19990524		
	US 5271924	A	19931221	US 1992-952992	19920929
	CA 2079493	AA	19930405	CA 1992-2079493	19920930
	CA 2079493	С	20020528	•	
	AT 141058	E	19960815	AT 1992-116804	19921001
	ES 2093163	Т3	19961216	ES 1992-116804	19921001
	AU 9226191	A1	19930408	AU 1992-26191	19921002
	AU 650791	B2	19940630		
	KR 219004	B1	19990901	KR 1992-18074	19921002
	US 5352431	A	19941004	US 1993-119387	19930913
PRAI	JP 1991-258017	A	19911004		
	US 1992-952992	A3	19920929		
OS	MARPAT 119:117749				

The bifunctional ligand comprises galactosamino-oligosaccharide and polyaminopolycarboxylic acid. To galactosamino-pentamer in phosphate buffer was added 1-(p-isothiocyanatebenzyl)diethylenetriaminepentaacetic acid, to give after workup their reaction product which in distilled H2O was added to 0.1M citrate buffer followed by InCl3 (148MBeq) to give the complex (I) having a radiochem. purity of 100%. The 1/2 life of I in blood was 55 min, clin. effective retention in blood and good excretion in urine.

67-43-6DP, Diethylenetriamine pentaacetic acid, reaction products with galactosamino-oligosaccharides, metal complexes 60239-18-1DP, 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid, reaction products with galactosamino-oligosaccharides, metal complexes 128174-30-1DP, reaction products with polyaminopolycarboxylic acid, metal complexes

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as imaging agent for diagnosis)

RN 67-43-6 HCAPLUS

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 60239-18-1 HCAPLUS

CN 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid (9CI) (CA INDEX NAME)

RN 128174-30-1 HCAPLUS

CN D-Galactose, O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

=> fil uspatful FILE 'USPATFULL' ENTERED AT 07:20:33 ON 19 OCT 2006 CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 17 Oct 2006 (20061017/PD) FILE LAST UPDATED: 17 Oct 2006 (20061017/ED) HIGHEST GRANTED PATENT NUMBER: US7124445 HIGHEST APPLICATION PUBLICATION NUMBER: US2006230483 CA INDEXING IS CURRENT THROUGH 17 Oct 2006 (20061017/UPCA) ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 17 Oct 2006 (20061017/PD) REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006

=> d bib abs hitstr tot 159

L59 ANSWER 1 OF 4 USPATFULL on STN ΑN 2003:72165 USPATFULL ΤI Process for producing metal complex of aminooligosaccharide derivative IN Hashiguchi, Yuji, Chiba, JAPAN Suzuki, Keisuke, Chiba, JAPAN Wada, Masatoshi, Chiba, JAPAN PΙ US 2003050452 A1 20030313 ΑI US 2002-204557 Α1 20020822 (10) WO 2000-JP110983 20001226 PRAI JP 2000-394258 20001226

DT Utility FS APPLICATION

LREP FITCH EVEN TABIN AND FLANNERY, 120 SOUTH LA SALLE STREET, SUITE 1600,

CHICAGO, IL, 60603-3406

CLMN Number of Claims: 11

ECL Exemplary Claim: 1

DRWN No Drawings LN.CNT 477

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A highly purified metal complex with an amino-oligosaccharide derivative is produced by effectively removing impurities, by-products, excess salts and the like that have been produced during the reaction steps for synthesis of the amino-oligosaccharide derivative and the steps for formation of its metal complexes. A process for producing a metal complex with an amino-oligosaccharide derivative is provided, in which a crude reaction liquid containing an amino-oligosaccharide derivative is subjected to a complexation process with a metal ion and a purification process, and the purification process comprises at least one step by a solvent extraction process, an anion exchange process, a membrane filtration process, an electrodialysis process or an adsorption process.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 67-43-6DP, Diethylenetriaminepentaacetic acid, reaction product with chitotrisaccharide 84354-98-3DP, reaction product with diethylenetriaminepentaacetic acid

(process for producing metal complex of aminooligosaccharide derivative and purification by solvent extraction, ion-exchange chromatog., reverse osmosis, electrodialysis, or adsorption method.)

RN 67-43-6 USPATFULL

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 84354-98-3 USPATFULL

CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

L59 ANSWER 2 OF 4 USPATFULL on STN

```
ΑN
       2002:149297 USPATFULL
TT
       Process for producing an amide compound
IN
       Takano, Naoyuki, Osaka, JAPAN
       Nakamura, Daisaku, Ichihara-shi, JAPAN
PΙ
       US 2002077456
                          A1
                                20020620
ΑI
       US 2001-971929
                          Α1
                                20011009 (9)
PRAI
       JP 2000-310626
                            20001011
DT
       Utility
FS
       APPLICATION
LREP
       BIRCH, STEWART, KOLASCH & BIRCH, LLP, P.O. Box 747, Falls Church, VA,
       22040-0747
CLMN
       Number of Claims: 18
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 514
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB
       There is disclosed a process for producing an amide compound, which
       process is characterized in that a compound having an amino group are
       reacted with a polyaminopolycarboxylic acid anhydride in the presence of
       the polyaminopolycarboxylic acid.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
    67-43-6DP, Diethylenetriaminepentaacetic acid, human serum
      albumin conjugate 411229-68-0P 411229-71-5P
      411229-73-7P 411229-74-8P
        (process for producing an amide oligosaccharides which can be used as a
        diagnostic imaging agents)
RN
     67-43-6 USPATFULL
CN
     Glycine, N, N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI)
       INDEX NAME)
    HO2C-CH2
                       CH_2 - CO_2H CH_2 - CO_2H
HO_2C-CH_2-N-CH_2-CH_2-N-CH_2-CH_2-N-CH_2-CO_2H
RN
     411229-68-0 USPATFULL
     D-Glucitol, O-2-[[[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)am
CN
       ino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-\beta-D-
       glucopyranosyl-(1\rightarrow 4)-0-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl]
       [(carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy-
       \beta-D-glucopyranosyl-(1\rightarrow 3)-2-[[[[2-[[2-
       [bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl
       )amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)
```

Absolute stereochemistry. Rotation (-).

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

RN 411229-71-5 USPATFULL

CN D-Galactitol, O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl) amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -O-2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 3)$ -2-[[[[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl](carboxymethyl)amino]acetyl]amino]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

$$HO_2C$$
 HO_2C
 HO_2C

PAGE 1-B

RN 411229-73-7 USPATFULL

CN D-Glucitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1+4)-0-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- β -D-glucopyranosyl-(1+3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 411229-74-8 USPATFULL

CN D-Galactitol, O-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl-(1-4)-0-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- α -D-galactopyranosyl-(1-3)-2-deoxy-2-[[[4,7,10-tris(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl]acetyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 2-A

PAGE 2-B

IT 60-00-4, Ethylenediaminetetraacetic acid, reactions 67-43-6, Diethylenetriaminepentaacetic acid 23911-25-3, Ethylenediaminetetraacetic dianhydride 23911-26-4, Diethylenetriaminepentaacetic acid dianhydride 81329-81-9 106145-40-8 132438-15-4 148690-82-8 411229-70-4

(process for producing an amide oligosaccharides which can be used as a

diagnostic imaging agents)

RN 60-00-4 USPATFULL

CN Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)- (9CI) (CA INDEX NAME)

RN 67-43-6 USPATFULL

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 23911-25-3 USPATFULL

CN 2,6-Morpholinedione, 4,4'-(1,2-ethanediyl)bis- (9CI) (CA INDEX NAME)

RN 23911-26-4 USPATFULL

CN Glycine, N, N-bis[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

$$CH_2-CO_2H$$
 $CH_2-CH_2-CH_2-CH_2-CH_2$

RN 81329-81-9 USPATFULL

CN Glycine, N-(carboxymethyl)-N-[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 106145-40-8 USPATFULL

CN Glycine, N-[2-[bis(carboxymethyl)amino]ethyl]-N-[2-(2,6-dioxo-4morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

132438-15-4 USPATFULL

RN CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-, trihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

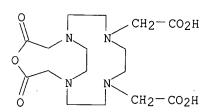
● 3 HCl

RN 148690-82-8 USPATFULL

CN 7,16-Dioxa-1,4,10,13-tetraazatricyclo[11.5.2.24,10]docosane-6,8,15,17tetrone (9CI) (CA INDEX NAME)

RN 411229-70-4 USPATFULL

CN 13-Oxa-1,4,7,10-tetraazabicyclo[8.5.2]heptadecane-4,7-diacetic acid, 12,14-dioxo- (9CI) (CA INDEX NAME)



L59 ANSWER 3 OF 4 USPATFULL on STN

ΑN 94:86163 USPATFULL

ΤI Low molecular weight polysaccharide complexes for X-ray imaging

IN Hashiguchi, Yuji, Sodegaura, Japan

Iwai, Kumiko, Ichihara, Japan

Seri, Shigemi, Ichihara, Japan

Kondo, Susumu, Ichihara, Japan Azuma, Makoto, Ichihara, Japan

PΑ Nihon Medi-Physics Co., Ltd., Hyogo, Japan (non-U.S. corporation) 19941004

PΙ US 5352431

19930913 (8)

ΑI US 1993-119387 RLI

Division of Ser. No. US 1992-952992, filed on 29 Sep 1992, now patented, Pat. No. US 5271924

PRAI JP 1991-3258017 19911004

DT Utility

FS Granted

EXNAM Primary Examiner: Hollinden, Gary E.

CLMN Number of Claims: 9

ECL Exemplary Claim: 1

DRWN 2 Drawing Figure(s); 1 Drawing Page(s)

LN.CNT 554

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

There is disclosed an imaging agent for diagnosis comprising a compound AΒ composed of a polynuclear type compound of the formula I or II: ##@MD wherein each X is a hydrogen atom or a bifunctional liga of them are bifunctional ligand and m or n is an integer at least one metal ion being coordinated with at least $\boldsymbol{\varphi}$ ligand moiety, said metal ion being selected from the gr_{i}^{\prime} of metal ions having the atomic number of 21-29, 31, 32, 49 and 56-83.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 67-43-6DP, Diethylenetriamine pentaacetic acid, reaction pro

with galactosamino-oligosaccharides, metal complexes 60239-18-1DP, 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid, reaction products with galactosamino-oligosaccharides, metal complexes 128174-30-1DP, reaction products with polyaminopolycarboxylic acid, metal complexes

(preparation of, as imaging agent for diagnosis)

RN 67-43-6 USPATFULL

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CF INDEX NAME)

RN 60239-18-1 USPATFULL

CN 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid (9CI) (CA INDEX NAME)

RN 128174-30-1 USPATFULL

CN D-Galactose, O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

L59 ANSWER 4 OF 4 USPATFULL on STN

AN 93:106799 USPATFULL

TI Low molecular weight polysaccharide complexes for nuclear magnetic resonance imaging

IN Hashiguchi, Yuji, Sodegaura, Japan Iwai, Kumiko, Ichihara, Japan Seri, Shigemi, Ichihara, Japan Kondo, Susumu, Ichihara, Japan Azuma, Makoto, Ichihara, Japan

PA Nihon Medi-Physics Co., Ltd., Hyogo, Japan (non-U.S. corporation)

PI US 5271924 19931221

AI US 1992-952992 19920929 (7)

PRAI JP 1991-258017 19911004

DT Utility FS Granted

EXNAM Primary Examiner: Hollrah, Glennon A.; Assistant Examiner: Hollinden,

Gary E.

CLMN Number of Claims: 8 ECL Exemplary Claim: 1

DRWN 2 Drawing Figure(s); 1 Drawing Page(s)

LN.CNT 543

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

There is disclosed an imaging agent for diagnosis comprising a compound composed of a polynuclear type compound of the formula I or II: ##STR1## wherein each X is a hydrogen atom or a bifunctional ligand, at least one of them are bifunctional ligand and m or n is an integer of 1 to 6, and at least one metal ion being coordinated with at least one bifunctional ligand moiety, said metal ion being selected from the group consisting of metal ions having the atomic number of 21-29, 31, 32, 37-39, 42-44, 49 and 56-83.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 67-43-6DP, Diethylenetriamine pentaacetic acid, reaction products with galactosamino-oligosaccharides, metal complexes 60239-18-1DP, 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid, reaction products with galactosamino-oligosaccharides, metal complexes 128174-30-1DP, reaction products with polyaminopolycarboxylic acid, metal complexes

(preparation of, as imaging agent for diagnosis)

RN 67-43-6 USPATFULL

RN 60239-18-1 USPATFULL

CN 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid (9CI) (CA INDEX NAME)

RN 128174-30-1 USPATFULL

CN D-Galactose, O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -O-2-

amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

=> => fil reg FILE 'REGISTRY' ENTERED AT 07:22:17 ON 19 OCT 2006 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9 DICTIONARY FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d ide can tot 161

L61 ANSWER 1 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN **411229-70-4** REGISTRY

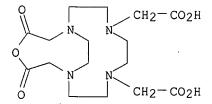
ED Entered STN: 06 May 2002

CN 13-0xa-1,4,7,10-tetraazabicyclo[8.5.2]heptadecane-4,7-diacetic acid, 12,14-dioxo- (9CI) (CA INDEX NAME)

MF C16 H26 N4 O7

SR CA

LC STN Files: CA, CAPLUS, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:325778

L61 ANSWER 2 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN **148690-82-8** REGISTRY

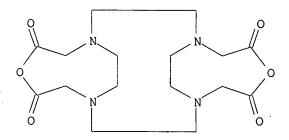
ED Entered STN: 15 Jul 1993

CN 7,16-Dioxa-1,4,10,13-tetraazatricyclo[11.5.2.24,10]docosane-6,8,15,17-

tetrone (9CI) (CA INDEX NAME) MF C16 H24 N4 O6

SR CA

LC STN Files: CA, CAPLUS, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)

3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:325778

REFERENCE 2: 121:103233

REFERENCE 3: 119:66757

L61 ANSWER 3 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN 132438-15-4 REGISTRY

ED Entered STN: 08 Mar 1991

CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-,

trihydrochloride (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C18 H37 N3 O13 . 3 Cl H

SR CA

LC CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL STN Files: CRN (84354-98-3)

Absolute stereochemistry.

●3 HC1

3 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:40237

REFERENCE 2: 136:325778

3: REFERENCE 114:122944

ANSWER 4 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN L61

RN 128174-30-1 REGISTRY

ED Entered STN: 13 Jul 1990

CN D-Galactose; O-2-amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -O-2amino-2-deoxy- α -D-galactopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-

(9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C18 H35 N3 O13

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 5 REFERENCES IN FILE CA (1907 TO DATE)
- 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
- 5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 131:35865

REFERENCE 2: 119:117749

REFERENCE 3: 117:33591

REFERENCE 4: 113:59770

REFERENCE 5: 113:59769

L61 ANSWER 5 OF 12 'REGISTRY COPYRIGHT 2006 ACS on STN

RN 106145-40-8 REGISTRY

ED Entered STN: 17 Jan 1987

CN Glycine, N-[2-[bis(carboxymethyl)amino]ethyl]-N-[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

MF C14 H21 N3 O9

CI COM

SR CA

LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPAT7ULL

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 17 REFERENCES IN FILE CA (1907 TO DATE)
- 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
- 17 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:183352

REFERENCE 2: 140:151915

REFERENCE 3: 136:325778

REFERENCE 4: 135:335174

REFERENCE 5: 133:220352

REFERENCE 6: 130:7447

REFERENCE 7: 123:93454

REFERENCE 8: 123:4743

REFERENCE 9: 119:220703

REFERENCE 10: 117:43667

L61 ANSWER 6 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN **84354-98-3** REGISTRY

ED Entered STN: 16 Nov 1984

CN D-Glucitol, O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -O-2-amino-2-deoxy- β -D-glucopyranosyl- $(1\rightarrow 4)$ -2-amino-2-deoxy-(9CI)

(CA INDEX NAME)

OTHER NAMES:

CN Chitotriitol

FS STEREOSEARCH

MF C18 H37 N3 O13

CI COM

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:177045

REFERENCE 2: 139:149878

REFERENCE 3: 137:87494

REFERENCE 4: 116:214814

REFERENCE 5: 113:147677

REFERENCE 6: 98:67748

L61 ANSWER 7 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN 81329-81-9 REGISTRY

ED Entered STN: 16 Nov 1984

CN Glycine, N-(carboxymethyl)-N-[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN EDTA monoanhydride

CN Ethylenediaminetetraacetic acid monoanhydride

MF C10 H14 N2 O7

LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, TOXCENTER, USPATFULL

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

```
21 REFERENCES IN FILE CA (1907 TO DATE)
21 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```

REFERENCE 1: 144:345523
REFERENCE 2: 144:183352
REFERENCE 3: 144:120091

REFERENCE 4: 143:454505

REFERENCE 5: 141:309224

REFERENCE 6: 139:45855

REFERENCE 7: 136:355448

REFERENCE 8: 136:325778

REFERENCE 9: 132:123091

REFERENCE 10: 129:339879

L61 ANSWER 8 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN 60239-18-1 REGISTRY

ED Entered STN: 16 Nov 1984

CN 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1,4,7,10-Tetraazacyclododecane-N,N',N'',N'''-tetraacetic acid

CN DOTA

CN NSC 681107

CN Tetraxetan

DR 105416-43-1

MF C16 H28 N4 O8

CI CON

LC STN Files: ADISNEWS, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CHEMCATS, CIN, CSCHEM, EMBASE, GMELIN*, IPA, MEDLINE, PROMT, TOXCENTER, USAN, USPAT2, USPATFULL

(*File contains numerically searchable property data)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

```
355 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
              571 REFERENCES IN FILE CAPLUS (1907 TO DATE)
REFERENCE
            1: 145:331514
REFERENCE
            2:
                145:328360
                145:291068
REFERENCE
            3:
REFERENCE
            4:
                145:287565
REFERENCE
            5:
                145:278265
REFERENCE
                145:249433
            6:
                145:243941
REFERENCE
            7:
```

567 REFERENCES IN FILE CA (1907 TO DATE)

REFERENCE 10: 145:130695
L61 ANSWER 9 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

145:189981

145:183323

RN 23911-26-4 REGISTRY

8:

9:

ED Entered STN: 16 Nov 1984

CN Glycine, N,N-bis[2-(2,6-dioxo-4-morpholinyl)ethyl]- (9CI) (CA INDEX NAME) OTHER CA INDEX NAMES:

CN 2,6-Morpholinedione, 4,4'-[[(carboxymethyl)imino]diethylene]di- (8CI)

CN Glycine, N, N-bis[2-(2,6-dioxomorpholino)ethyl]- (8CI)

OTHER NAMES:

REFERENCE

REFERENCE

CN 1,5-Bis(2,6-dioxomorpholino)-3-azapentane-3-acetic acid

CN Cyclic DTPA anhydride

CN Diethylenetriamine-N, N, N', N'', N''-pentaacetic acid N, N''-dianhydride

CN Diethylenetriaminepentaacetic acid dianhydride

CN Diethylenetriaminepentaacetic bisanhydride

CN Diethylenetriaminepentaacetic dianhydride

CN DTPA anhydride

CN DTPA cyclic anhydride

CN DTPA dianhydride

CN N, N-Bis[2-(2,6-dioxo-4-morpholinyl)ethyl]glycine

CN NSC 379317

DR 167271-36-5, 120195-90-6, 119895-99-7, 111535-62-7, 150909-78-7, 291290-07-8

```
MF C14 H19 N3 O8
```

CI COM

LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CSCHEM, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL (*File contains numerically searchable property data)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

541 REFERENCES IN FILE CA (1907 TO DATE)

100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

541 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:336185

REFERENCE 2: 145:330714

REFERENCE 3: 145:330664

REFERENCE 4: 145:265850

REFERENCE 5: 145:140473

REFERENCE 6: 145:139987

REFERENCE 7: 145:130752

REFERENCE 8: 145:120046

REFERENCE 9: 145:119464

REFERENCE 10: 145:109915

L61 ANSWER 10 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN 23911-25-3 REGISTRY

ED Entered STN: 16 Nov 1984

CN 2,6-Morpholinedione, 4,4'-(1,2-ethanediyl)bis- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 2,6-Morpholinedione, 4,4'-ethylenedi- (8CI)

OTHER NAMES:

CN 1,2-Bis[2,6-dioxo-4-morpholinyl]ethane

CN 4,4'-Ethylenebis(2,6-dioxomorpholine)

CN 4,4'-Ethylenebis(2,6-morpholinedione)

CN EDTA bisanhydride

CN EDTA dianhydride

CN Ethylenediaminetetraacetic acid dianhydride

CN Ethylenediaminetetraacetic dianhydride

CN Glycine, N, N'-1, 2-ethanediylbis[N-(carboxymethyl)-, cyclic

N, N:N', N'-dianhydride

DR 122219-64-1, 151805-59-3

MF C10 H12 N2 O6

CI COM

LC STN Files: AGRICOLA, BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, TOXCENTER, USPAT2, USPATFULL (*File contains numerically searchable property data)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

206 REFERENCES IN FILE CA (1907 TO DATE)
27 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
206 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:28182

REFERENCE 2: 144:482176

REFERENCE 3: 144:332328

REFERENCE 4: 144:265668

REFERENCE 5: 144:260367

REFERENCE 6: 144:224778

REFERENCE 7: 144:135265

REFERENCE 8: 144:120091

REFERENCE 9: 144:57679

REFERENCE 10: 143:359997

L61 ANSWER 11 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN

RN 67-43-6 REGISTRY

ED Entered STN: 16 Nov 1984

CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

```
OTHER NAMES:
      1,1,4,7,7-Diethylenetriaminepentaacetic acid
 CN
      3,6,9-Triazaundecanedioic acid, 3,6,9-tris(carboxymethyl)-
 CN
      Acetic acid, 2,2',2''-[[(carboxymethyl)imino]bis(2,1-
 CN
      ethanediylnitrilo)]tetrakis-
 CN
      Chel 330 acid
 CN
      Chel DTPA
 CN
      Clewat DA
 CN
      Complexon V
 CN
      Dabeersen 503
CN
      Detapac
 CN
      Detarex
 CN
      DETP
 CN
      DETPA
 CN
      Diethylenetriamine-N,N,N',N'',N''-pentaacetic acid
 CN
      Diethylenetriaminepentaacetic acid
 CN
      Dissolvine D
 CN
      DPTA
CN
      DTPA
CN
      Hamp-Ex Acid
CN
      Monaguest CAI
     N, N-Bis[2-[bis(carboxymethyl)amino]ethyl]glycine
CN
CN
CN
      Pentacarboxymethyl diethylenetriamine
CN
      Pentetic acid
CN
      Titriplex V
      [[(Carboxymethyl)imino]bis(ethylenenitrilo)]tetraacetic acid
CN
     782415-12-7, 803683-39-8, 573987-64-1, 13407-13-1, 6889-50-5, 7575-40-8,
DR
      25737-54-6, 84932-15-0, 49758-21-6
     C14 H23 N3 O10
MF
CI
     COM
SR
     CA
LC
     STN Files:
                  AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
       CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB,
       DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA,
       MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER,
       ULIDAT, USAN, USPATZ, USPATFULL
         (*File contains numerically searchable property data)
     Other Sources:
                     DSL**, EINECS**, TSCA**
         (**Enter CHEMLIST File for up-to-date regulatory information)
     HO<sub>2</sub>C-CH<sub>2</sub>
                       CH2-CO2H
                                   CH2-CO2H
HO_2C-CH_2-N-CH_2-CH_2-N-CH_2-CH_2-N-CH_2-CO_2H
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**
            6494 REFERENCES IN FILE CA (1907 TO DATE)
            2017 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
            6512 REFERENCES IN FILE CAPLUS (1907 TO DATE)
               2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)
REFERENCE
            1: 145:340826
```

REFERENCE

REFERENCE

2: 145:335242

3: 145:327226

```
REFERENCE
            4:
                145:326331
REFERENCE
            5:
                145:321061
REFERENCE
                145:313010
            6:
REFERENCE
                145:309038
            7:
REFERENCE
            8:
                145:308204
REFERENCE
            9:
                145:304953
REFERENCE 10: 145:300382
L61 ANSWER 12 OF 12 REGISTRY COPYRIGHT 2006 ACS on STN
     60-00-4 REGISTRY
     Entered STN: 16 Nov 1984
     Glycine, N, N'-1, 2-ethanediylbis[N-(carboxymethyl)- (9CI) (CA INDEX NAME),
OTHER CA INDEX NAMES:
    Acetic acid, (ethylenedinitrilo)tetra- (8CI)
OTHER NAMES:
     3,6-Diazaoctanedioic acid, 3,6-bis(carboxymethyl)-
CN
     62: PN: US20050026181 PAGE: 33 claimed protein
CN
     Acetic acid, 2,2',2'',2'''-(1,2-ethanediyldinitrilo)tetrakis-
CN
CN
     Acroma DH 700
CN
     Celon A
CN
     Celon ATH
CN
     Cheelox
CN
     Chelest 3A
CN
    Chemcolox 340
CN
    Clewat TAA
CN
    Complexon II
CN
     Dissolvine E
CN
    Dissolvine Z
CN
    Edathamil
CN
    Edetic acid
CN
     EDTA
CN
     EDTA (chelating agent)
CN
     Endrate
CN
     Ethylene-N, N'-biscarboxymethyl-N, N'-diglycine
     Ethylenediamine-N, N, N', N'-tetraacetic acid
CN
CN
     Ethylenediaminetetraacetic acid
     Ethylenedinitrilotetraacetic acid
CN
CN
     Gluma Cleanser
CN
     Havidote
     ICRF 185
CN
CN
     Metaquest A
     N, N'-1, 2-Ethanediyl-bis-N-(carboxymethyl)glycine
CN
CN
     Nervanaid B acid
     NSC 97243
CN
     NSC 97404
CN
CN
     Nullapon B acid
CN
     Nullapon BF acid
CN
     Perma Kleer 50 acid
CN
     Quastal Special
CN
     Sequestrene AA
CN
     Sequestrene K 4
CN
     Sequestric acid
```

CN

Sequestrol

```
CN
    Techrun DO
CN
    Titriplex
CN
    Titriplex II
CN
    Trilon BS
CN
    Trilon BW
CN
    Versene
CN
    YD 30
     Zonon AO
CN
DR
     13440-78-3, 20539-27-9, 94108-75-5, 26627-46-3, 30485-87-1, 30485-88-2,
     30485-90-6, 32757-10-1, 161122-33-4, 402925-67-1, 675141-16-9
MF
    C10 H16 N2 O8
CI
    COM
LC
    STN Files:
                ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS,
       BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS,
       CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU,
       EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*,
       IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT,
       PROUSDDR, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2,
       USPATFULL, VETU, VTB
         (*File contains numerically searchable property data)
                    DSL**, EINECS**, TSCA**, WHO
         (**Enter CHEMLIST File for up-to-date regulatory information)
```

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

30115 REFERENCES IN FILE CA (1907 TO DATE)
3907 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
30241 REFERENCES IN FILE CAPLUS (1907 TO DATE)
18 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:347396 REFERENCE 2: 145:347386 REFERENCE 3: 145:345010 REFERENCE 145:343831 REFERENCE 5: 145:342641 REFERENCE 6: 145:342512 REFERENCE 7: 145:342504 REFERENCE 8: 145:342327 REFERENCE 9: 145:342301 10: 145:341899 REFERENCE

=> d his

```
(FILE 'HOME' ENTERED AT 06:18:59 ON 19 OCT 2006)
           SET COST OFF
FILE 'HCA' ENTERED AT 06:21:20 ON 19 OCT 2006
```

```
L1
              1 S US20020077456/PN OR (US2001-971929# OR JP2000-310626)/AP,PRN
                E TAKANO/AU
                E TAKANO N/AU
L2
             91 S E3, E18
                E NAOYUKI/AU
                E NAO YUKI/AU
                E NAKAMURA/AU
L3 -
              4 S E3
                E NAKAMURA D/AU
L4
             48 S E3, E7, E8
                E NAKAMURA NAME/AU
```

E DAISAKU/AU E NIHON/PA,CS E NIHON MED/PA, CS

L5 108 S E14-E26 E SUMITO/PA,CS L6 93032 S E55, E56 OR SUMITOMO?/PA, CS

SEL RN L1

```
FILE 'REGISTRY' ENTERED AT 06:27:55 ON 19 OCT 2006
L7
             22 S E1-E22
^{18}
              6 S L7 AND (C60H100N12O40 OR C48H79N9O34 OR C66H115N15O34)
L9
             7 S (C60H100N12O40 OR C48H79N9O34 OR C66H115N15O34) NOT L8
```

L10 13 S L8, L9 L11 1 S 67-43-6 L12 1 S 60-00-4 L13 1 S 60239-18-1 L141 S 23911-25-3 L15 1 S 23911-26-4 L16

2 S L7 AND NC2OC2/ES NOT L14,L15 L17 2 S 148690-82-8 OR 411229-70-4

L18 5 S 115724-92-0 OR 411229-75-9 OR 151677-09-7 OR 138885-99-1 OR 1

L19 3 S L7 NOT L8-L18 L20 1 S 84354-98-3 L21 1 S 84354-98-3/CRN L22 2 S L20, L21 L23 2 S C18H37N3O13/MF L24 1 S L23 NOT L22

L25 0 S 835626-40-9/CRN L26 3 S L22, L23, L24

L27 STR .L28 50 S L27 L29 1204 S L27 FUL

SAV L29 SATYA971/A

L30 2 S L29 AND NC2NC2NC2/ES

L31 1 S L29 AND NC2OC2/ES L32 STR

L33 0 S L32 SAM SUB=L29 L34 STR L32

L35 1 S L34 SAM SUB=L29 L36 STR L34

L37

1 S L36 SAM SUB=L29 L38 20 S L36 FUL SUB=L29

SAV L38 SATYA971A/A L39 11 S L38 NOT L10

L40 0 S L39 NOT (C6/ES OR P/ELS)

```
L41
          2 S L10 NOT L30, L38
L42
             9 S L10 AND L38
L43
              0 S L29 AND (63215 OR 55514)/RID
L44
             2 S L27 CSS SAM SUB=L29
L45
             27 S L27 CSS FUL SUB=L29
                SAV L45 SATYA971B/A
L46
             9 S L45 AND 1/NC
L47
             17 S L45 NOT L26, L46
                SEL RN 7 16 17
L48
              3 S E23-E25
L49
             13 S L26, L46, L48
     FILE 'HCAPLUS' ENTERED AT 07:17:06 ON 19 OCT 2006
L50
             2 S L30 OR L42
L51
              3 S L49 AND L11-L13
L52
              1 S L49 AND L14-L17
L53
              4 S L50, L51, L52
L54
              3 S L53 AND L1-L6
L55
              4 S L53, L54
     FILE 'USPATFULL' ENTERED AT 07:18:27 ON 19 OCT 2006
L56
              1 S L30 OR L42
L57
              4 S L49 AND L11-L13
L58
              1 S L49 AND L14-L17
L59
              4 S L56-L58
     FILE 'REGISTRY' ENTERED AT 07:19:08 ON 19 OCT 2006
L60
             11 S L30 OR L42
     FILE 'HCAPLUS' ENTERED AT 07:20:10 ON 19 OCT 2006
     FILE 'USPATFULL' ENTERED AT 07:20:33 ON 19 OCT 2006
     FILE 'HCAPLUS' ENTERED AT 07:21:39 ON 19 OCT 2006
                SEL HIT RN L55
     FILE 'REGISTRY' ENTERED AT 07:22:02 ON 19 OCT 2006
L61
             12 S E26-E48 NOT L30, L42
     FILE 'REGISTRY' ENTERED AT 07:22:17 ON 19 OCT 2006
```

=>